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**CLAIMS:**

1. A composite article comprising a metal reinforcing element and molded plastic coating firmly attached thereto, wherein said reinforcing element is formed to define an open channel having a longitudinal axis and an open side parallel to  
5 said axis, and said plastic coating includes a portion formed as a wall mechanically closing said open side of the channel.
2. The composite article according to Claim 1, wherein the form of said open channel allows insertion of a mold core snugly fitting said reinforcing element, the insertion being through said open side, in the absence of said plastic coating.
- 10 3. The composite article according to Claim 2, wherein said reinforcing element has two side walls and a transverse wall connecting said side walls.
4. The composite article according to Claim 2, wherein said reinforcing element has a profile shaped as a truncated oval.
5. The composite article according to Claim 2, wherein said reinforcing  
15 element comprises two walls connected along a common edge.
6. The composite article according to Claim 1, wherein said metal reinforcing element has openings for providing better adhesion with said plastic coating.
7. The composite article according to Claim 6, wherein said openings are  
20 through-going and said plastic coating has protrusions with swollen heads at the inner side of the channel, obtained through said openings.
8. The composite article according to Claim 1, wherein said metal reinforcing element is made of one of the following: bent sheet metal, extruded metal profile, rolled metal profile.
9. The composite article according to Claim 1, wherein said plastic coating  
25 has closed tubular form embracing said metal reinforcing element.
10. The composite article according to Claim 1, wherein said plastic coating has a form including a second channel with open profile having two free edges, said two free edges being fixed to two respective edges of the open channel of said metal reinforcing element.

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11. The composite article according to Claim 1, wherein said metal reinforcing element is formed to define a plurality of open channels each of them being mechanically closed by a wall which is a portion of said plastic coating.
12. The composite article according to Claim 1, wherein said metal reinforcing  
5 element is formed to define a plurality of open channels, some of them being mechanically closed by a wall which is a portion of said plastic coating, so as to allow bending of said composite article along the rest open channels.
13. The composite article according to Claim 1, wherein said plastic coating has a portion at least partially covering said metal reinforcing element at the inner  
10 side of said channel.
14. The composite article according to Claim 1, wherein the closing wall formed by said plastic coating has at least one opening.
15. The composite article according to Claim 1, wherein said plastic coating has at least one opening located so as to expose a portion of said metal reinforcing  
15 element.
16. The composite article according to Claim 1, having at one end thereof an extension of said injection-molded plastic coating with external shape allowing tight insertion of said extension into the channel of a similar composite article, in the direction of said channel axis.
- 20 17. The composite article according to Claim 1, wherein said plastic coating is at least one of the following materials:  
thermoplastic, polymerizing resin, polypropylene, polyacetal, polystyrene.
18. A constructive element comprising at least two composite articles as described in Claim 1, said articles being connected by plastic elements integrally  
25 formed from the same injection-molded plastic as said composite articles.
19. The constructive element of Claim 18, wherein said at least two composite articles are co-planar elongated beams.
20. The constructive element of Claim 19, wherein said elongated beams are parallel and said plastic elements are transverse beams.

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21. The constructive element of Claim 19, wherein said plastic elements are channel-shaped beams with open profiles.

22. The constructive element of Claim 21, wherein said open profiles have an open side oriented in one direction.

5 23. The constructive element of Claim 22, wherein the metal reinforcing elements of said elongated beams are oriented with their open side in the same direction as the open profiles of said channel-shaped beams.

24. A method for manufacturing the composite article of Claim 1, where the form of said metal reinforcing element allows insertion, via the open side of the  
10 channel, of a mold core snugly fitting said reinforcing element, the method including:

- providing said metal reinforcing element;
- providing said mold core;
- providing a mold comprising at least two parts formed to define a mold  
15 cavity therebetween when the mold is assembled, said mold being adapted to accommodate said metal reinforcing element fixedly in said cavity, allowing space for said plastic coating;
- inserting said mold core in said metal reinforcing element via said open side, so that said mold core snugly fits said element;
- 20 - assembling said mold parts and said metal reinforcing element with the inserted core therein so as to fix said reinforcing element in the cavity of said mold;
- injecting flowable and settable plastic coating into said space to form said composite article;
- releasing the obtained article including the reinforcing element, the set  
25 plastic coating and said mold core, by disassembling said mold; and
- removing said mold core from said article in direction along said channel axis.

25. The method according to Claim 24, wherein the assembling of said mold parts and said metal reinforcing element is done by relative motion thereof  
30 transverse to said channel axis.

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26. The method according to Claim 24, wherein said mold parts have a plurality of protrusions adapted to abut said metal reinforcing element when said mold is assembled, thereby fixing the reinforcing element in said mold cavity.

27. The method according to Claim 26, wherein at least part of said  
5 protrusions are relatively wide and have rounded edges so as to form in said plastic coating decorative windows visibly exposing the surface of said metal reinforcing element.

28. The method according to Claim 24, wherein said reinforcing element has openings and said injected plastic coating fills them.

10 29. The method according to Claim 28, wherein said rigid core has recesses which are located opposite said openings when said mold core is inserted in said reinforcing element, so that said injected plastic coating can form protrusions obtained through said openings, said protrusions having swollen heads at the inner side of the channel.

15 30. The method according to Claim 24, wherein said mold core is assembled from at least two parts divided along the channel so as to facilitate the removing of said core in direction parallel to the channel axis.